Remarks

Claims 1-38 are pending in this application. By way of this Amendment, claims 1 and 29 have been amended and claims 31-38 have been canceled. Accordingly, claims 1-30 are currently pending. Favorable consideration is earnestly requested.

The Office Action states that a provisional election was made without traverse to prosecute the invention of Group I, claims 1-30. Applicant confirms this election. Accordingly, claims 31-38 have been canceled.

Claims 29 and 30 have been rejected under 35 U.S.C. §112 as bein indefinite. Claim 29 has been amended to include that cross-linking is induced "in the polymeric material of the polymeric tube". Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection of claims 29 and 30 under 35 U.S.C. §112.

Claims 1, 3, 9, 10 and 24-30 have been rejected under 35 U.S.C. § 103(a) as being obvious over Blyler, Jr *et al.* (U.S. Patent No. 6,265,018). A *prima facie* case of obviousness has not been presented. Three criteria must be met to establish *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference, or combination of references, must teach or suggest all the claim limitations. Applicant respectfully traverses the rejection since the prior art does not provide any suggestion or motivation to modify the Blyler, Jr *et al.* reference to arrive at the subject invention as claimed in claims 1-30 and there is no reasonable expectation of success of such a modification.

The Office Action states that the Blyler, Jr. *et al.* reference discloses the basic claimed method of manufacturing a plastic optical transmission medium by coextruding a core and cladding polymeric material into a tube, one or the other comprising a diffusible additive, surrounding the coextruded polymeric tube with an outer tubing which has a glass transition temperature which is higher than the temperature at which a diffusion process is carried out (see col. 3, line 59) and heating the coextruded polymeric tube surrounded by the outer tubing to a diffusion temperature to make a graded refractive index medium.

The applicant respectfully traverses this grounds for rejection because the cited reference does not disclose or suggest the unique and advantageous method or apparatus claimed by the current applicant. Claim 1 has been amended to include "wherein the method is continuous". Accordingly, claim 1 is now directed to an embodiment of the embodiment of the subject invention, as claimed in claims 1, 3, 9, 10, and 24-30, that pertains to a continuous method of manufacturing a plastic optical transmission medium. Support for this amendment can be found at page 1, line 29; page 4, line 5; page 5, line 5; and page 12, line 7. The continuous nature of the subject method results in, as shown in Figure 2A, the polymeric tube surrounded by the outer tubing continuously flowing out of the extrusion die and entering the heated enclosure (or other heat source) for diffusion to occur (see page 5, lines 13-17). The addition of the limitation "wherein the method is continuous" differentiates the subject invention as claimed in amended claim 1 from the teachings of the Blyler, Jr *et al.* reference, which teaches "block 102 draws the perform to the proper diameter for a step index plastic optical fiber, adds the buffer material to the step index plastic optical fiber, and places the step index plastic optical fiber on a reel . . . in block 103, the reel of step index optical fiber is placed in an area at ambient temperature, the oven is then heated until the optical fiber reaches an equilibrium temperature which is slightly less than the temperature required to place the step index plastic optical fiber in the high rate of diffusion state that causes a graded index plastic optical fiber to be formed." The applicant submits that the method taught by the Blyler, Jr *et al.* reference is a batch method rather than a continuous method. In particular, the graded index plastic optical fiber of the Blyler, Jr *et al.* reference is placed on a reel and then the reel is put in an oven to heat the fiber for diffusion of the additives (see column 4, lines 7-35). Moreover, the method involves "testing" the reeled fiber during the diffusion of the additives to monitor the refractive index profile of the fiber (related to the diffusion) via, for example, pulse dispersion test, differential mode delay test, or bit error rate test (see column 5, line 44 through column 6, line 5). This testing, or monitoring, of the index of refraction profile would seem to require access to the end(s) of the fiber, which would not be available during a continuous production of fiber. Accordingly, the applicant asserts that there is no motivation to modify the Blyler, Jr *et al.* reference as stated in the Office Action and there is no reasonable expectation of success of such a modification. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 3, 9, 10 and 24-30 under 35 U.S.C. §103(a).

Claims 2, 4-8, and 11-23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Blyler, Jr et al. in view of Koike et al. (see col. 2, lines 45-48; col. 4, lines 36-67; col. 2, lines 49; Table 2 for diffusible additives). The applicant respectfully traverses this grounds for rejection. The Office Action states that Blyler, Jr et al. discloses the basic claimed process as set forth in paragraph 3, supra, the primary reference essentially lacking an explicit disclosure of using a non-polymerizing additive, the particular manner of diffusing the additive, refractive index relationships and polymeric materials for the concentric cylinders and additives used. Koike et al. –621 discloses making a graded index medium similar to that being made in the primary reference and teaches the use of a non-polymerizing additive, certain of the instant additives and polymeric materials for the concentric cylinders and steps and refractive indices used for the polymers to arrive at the desired refractive index gradient. It is submitted that all of these aspects are quite well known in the art and would have been obvious expedients in the process of Blyler, Jr et al. dependent on the exact optical (fiber) medium desired and use therefore.

In reference to claims 2, 4-8, and 11-23, the applicant respectfully traverses this grounds for rejection because the cited references alone, or in combination, do not disclose or suggest the unique and advantageous method or apparatus claimed by the current applicants. In particular, the limitations of the Blyler, Jr *et al.* reference has been discussed above with respect to the rejection of claim 1 from which claims 2, 4-8, and 11-23 depend. The Koike *et al.* reference does not cure such defects.

Therefore, a *prima facie* case of obviousness has not been presented. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection of claims 2, 4-8, and 11-23 under 35 U.S.C. §103(a).

In view of the foregoing remarks and the amendment above, the applicant believes that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicant also invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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JSP/gld
Attachments
1. Petition and Fee for Extension of Time Under 37CFR §1.136.